ASSAYS AND THERAPIES FOR LATENT VIRAL INFECTION

Abstract of the Disclosure

Compositions that bind viral proteins that are specifically expressed during the latent stage of the viral life cycle are disclosed. These compositions bind the latent viral proteins while the viral proteins are expressed in their cellular host, and provide a means for targeting cells that harbor latent virus. In a preferred embodiment the compositions are antibodies which bind the extracellular region of the latent viral protein, most preferably LMP-2A, an EBV latent protein, which are conjugated to a diagnostic or cytotoxic agent or immobilized to a solid support for removal of the infected cells. These antibodies are capable of distinguishing cells expressing EBV DNA from cells which are not expressing EBV DNA. Compositions that can be used to elicit production of these antibodies, or as a vaccine, are also disclosed. Methods for generating diagnostic or cytotoxic reagents and vaccines based on the viral epitopes that identify cells harboring latent virus are also disclosed. The antibody conjugates can be used in diagnostic assays to identify cells expressing latent viral protein and people who are harboring latent viral particles. The antibody conjugates can also be used to remove the infected cells or to kill the infected the cells. Alternatively, or in addition, the viral proteins or portions thereof can be used as a vaccine to induce an immune reaction by the host to kill the infected cells. These methods can be used to detect or treat patients harboring latent viruses like EBV and who are at risk of developing a disease such as an autoimmune disease like systemic lupus erythematosus (SLE) and rheumatoid arthritis (RA).